

## CLAIMS

1. A gamma camera comprising:  
a plurality of pixelated detectors wherein each pixelated detector provides a detector signal responsive to photons that are incident on it;  
5 a plurality of processing circuits that receive said detector signals and provide processed signals responsive to said detector signals; and  
at least one printed circuit board on which said processing circuits are mounted and having conductors thereon that carry said detector signals to said processing circuits;  
wherein said processing circuits are mounted on said printed circuit board at locations  
10 remote from said detectors; and  
wherein said plurality of pixelated detectors form a two-dimensional planar array.
2. A gamma camera according to claim 1 comprising a motherboard having conductors thereon and wherein conductors in said mother board and conductors in said printed circuit  
15 board are in electrical contact and wherein said conductors on said motherboard carry processed signals.
3. A gamma camera according to claim 1 and including a heat-insulating material situated between said pixelated detectors and said processing circuits.  
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4. A gamma camera according to claim 3 wherein said heat-insulating material and said pixelated detectors are spaced apart.
5. A gamma camera according to claim 4 comprising an air circulator that circulates air in  
25 said space between said heat-insulating material and said pixelated detectors.
6. A gamma camera according to claim 3 wherein said heat-insulating material and said processing circuits are spaced apart.
- 30 7. A gamma camera according to claim 6 comprising an air circulator that circulates air in said space between said heat insulating material and said processing circuits.
8. A gamma camera according to claim 5 comprising an air cooler that cools air circulated by said air circulator.

9. A gamma camera according to claim 1 and comprising a cooling system comprising heat pipes and a means for removing heat from said heat pipes wherein said heat pipes carry heat from said gamma camera to said means for removing heat.

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10. A gamma camera according to claim 1 and comprising a cooling system having a refrigerant fluid, a means for removing heat from said refrigerant fluid and a means for circulating said refrigerant fluid between said gamma camera and said means for removing heat.

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11. A gamma camera according to claim 1 wherein said processing circuits are comprised in ASICs.

12. A method of connecting a two dimensional planar array of pixelated gamma ray detectors with processing circuits for processing signals from said detector comprising:

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locating said processing circuits so that they are remotely situated with respect to said pixelated detector; and

connecting said pixelated detectors to said processing circuits via conductors of a printed circuit board.

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13. A method of protecting pixelated detectors in a gamma camera from heat radiated by processing circuits that process signals from said pixelated detectors comprising:

connecting said pixelated detectors in accordance with claim 12 so as to provide a space between said pixelated detectors and said processing circuits; and

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circulating air in said space.

14. A method according to claim 13 comprising positioning heat-insulating material in said space between said pixelated detectors and said processing circuits.

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15. A method according to claim 14 wherein positioning heat-insulating material comprises positioning heat-insulating material so that there is a space between said heat-insulating material and said pixelated detectors.

16. A method according to claim 15 wherein circulating air comprises circulating air in a region of said space between said heat-insulating material and said pixelated detectors.

5 17. A method according to claim 14 wherein positioning heat-insulating material comprises positioning heat-insulating material so that there is a space between said heat-insulating material and said processing circuits.

18. A method according to claim 17 wherein circulating air comprises circulating air in a region of said space between said heat-insulating material and said processing circuits.

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19. A method according to claim 13 wherein circulating air comprises cooling air and circulating cooled air.